



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/364,565 | 07/30/1999 | RUDOLF A. WIEDEMANN | 003588.P003 | 9619 |

23349 7590 03/30/2004
STATTLER JOHANSEN & ADELI
P O BOX 51860
PALO ALTO, CA 94303

| |
|----------|
| EXAMINER |
|----------|

VILLECCO, JOHN M

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2612

10

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/364,565

Applicant(s)

WIEDEMANN, RUDOLF A.

Examiner

John M. Villecco

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 32-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29,30,32-34 and 36 is/are allowed.
- 6) ☒ Claim(s) 1-8,11,14,15,20-26,28 and 35 is/are rejected.
- 7) ☒ Claim(s) 9,10,12,13,16-19,27 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant has amended claims 1 and 31-34 to overcome the 112 rejections presented in the previous office action. However, applicant has failed to address the 112 rejection for claim 36 from the prior office action. Furthermore, the examiner has changed the 112 rejection to a claim rejection since the examiner can tell what the second lens refers to from the specification.

2. Regarding claims 1 and 35, applicant has amended the claim to include the limitation of the lens system in the sealed subassembly being electrically controlled. Applicant argues that the Sekine reference fails to teach electrically driving a lens assembly in a self-contained sealed camera assembly. The applicant presumes that the Sekine reference would be used to reject the newly added limitation of claim 1. However as disclosed in column 24, lines 36-60, the lens holders (1 and 2) and thus the lenses, can be electrically adjusted within the housing relative to each other in order to focus the image onto the image sensor (6). An electrical signal is input to holder device to adjust the distance between the lenses (col. 24, lines 49-52). Therefore, the rejection from the previous office action will be repeated.

Claim Objections

3. Claims 33 and 36 are objected to because of the following informalities:

- Claim 33 is objected to for being dependent upon cancelled claim 31. It appears that applicant forgot to change the dependency of claim 33 to being dependent upon claim 29.

Art Unit: 2612

- Claim 36 recites the limitation "the second lens" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 2, 4, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Izumi et al. (U.S. Patent No. 5,400,072).**

6. Regarding *claim 1*, Izumi discloses a video camera unit having an airtight mounting arrangement. The camera unit includes:

- A housing comprising shield case (200) (Figure 28A), having a first opening through which light can enter and a second opposing opening.
- A window (glass cap, 250) that closes the first opening. The second opening is closed by the substrate (249) upon which an imager (6) is mounted. When fully assembled the package is designed to be highly airtight. This property protects against the ingress of contaminants. See column 19, lines 7-25.
- A plurality of lenses (L1, L2, L3, and L4) located within the enclosure for focusing the light onto the imager chip (6).

Art Unit: 2612

- The holders (1 and 2) serve to mount the lenses to the housing. Additionally, the lenses are moveable in a direction in which light passes through the first opening. See column 22, line 60 to column 23, line 20. Additionally, as disclosed in column 24, lines 36-60, the lens holders (1 and 2) and thus the lenses, can be adjusted within the housing relative to each other in order to focus the image onto the image sensor (6). An electrical signal is input to holder device to adjust the distance between the lenses (col. 24, lines 49-52).
- Finally, the apparatus includes a movement imparting apparatus in the form of a groove (400) and projection (401) which are formed to be part of the holders (1 and 2) which are both secured to the housing and the lenses. See column 23, line 65 to column 24, line 23.

7. As for **claim 2**, the first and second openings of the apparatus of Izumi are fixed and cannot be moved relative to one another.

8. With regard to **claim 4**, as mentioned in column 19, lines 34-42, Izumi discloses that the structure is mounted to a printed board, thus enclosing the structure. The second opening is closed by the printed board upon which an image pickup device (6) is mounted. When fully assembled the package is designed to be highly airtight. This property protects against the ingress of contaminants. See column 19, lines 7-25.

9. Regarding **claim 5**, Izumi discloses that the device includes leads (61) that extend from enclosure and are external to the enclosure. The leads are inherently in electrical communication with the imager. See Figure 2A.

Art Unit: 2612

10. As for *claim 7*, Izumi discloses that the imaging device (6) includes an imaging chip (64). Since it is disposed in a video camera, it is inherent that the imaging chip is a light detector array.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (U.S. Patent No. 5,400,072) in view of O'Regan et al. (U.S. Patent No. 5,359,190).**

13. Regarding *claim 3*, as mentioned above in the discussion of claim 1, Izumi discloses all of the limitations of the parent claim. However, Izumi fails to specifically disclose that the window is a refractory lens. O'Regan, on the other hand, discloses that it is well known in the art to close a top opening of an imager subassembly with a refractory lens. As shown in Figure 4, the lens (81) which caps the imaging device is a refractory lens. By implementing a lens to cap the imaging device, one can do away with unnecessary components. The use of a lens instead of a window would allow the incoming light to be directed to the imager immediately. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a refractory lens instead of a plain window in order to reduce the number of parts used in its construction, thus reducing costs.

Art Unit: 2612

14. As for *claim 6*, as mentioned above in the discussion of claim 1, Izumi discloses all of the limitations of the parent claim. However, Izumi fails to specifically disclose that the connector has terminals that supply power and control signals. O'Regan, on the other hand, teaches that it is well known in supply power and control signals to an imaging module through the connector leads. O'Regan discloses in column 3, lines 33-39, that the TAB tape carries signals and power leads to the integrated circuit die. Therefore, it would have been obvious to use the leads of Izumi to provide control signals and power to the imager so that the imager can be operated.

15. **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (U.S. Patent No. 5,400,072) in view of Takematsu (Japanese Publ. No. 04-223453).**

16. With regard to *claim 8*, as mentioned above in the discussion of claim 1, Izumi discloses all of the limitations of the parent claim. However, Izumi fails to specifically disclose that the first member is an elongate member having a first end connected to the housing and a second end connected to the lens. Takematsu, on the other hand, discloses that it is well known in the art to use an elongate member to impart motion to a lens. Takematsu teaches the use of a spring (26) to impart motion to a lens barrel system (21). As shown in Figure 1, one end is connected to the housing and the other end is indirectly coupled to the lens system (21). This structure eliminates the need for a motor, thus reducing costs and battery power. Therefore, it would have been obvious to one of ordinary skill in the art to implement this system in Izumi so that battery power and space are conserved.

Art Unit: 2612

17. **Claim 11, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (U.S. Patent No. 5,400,072) in view of Takematsu (Japanese Publ. No. 04-223453) and further in view of Azegami et al. (U.S. Patent No. 5,408,285).**

18. Regarding *claim 11*, as mentioned above in the discussion of claim 8 both Izumi and Takematsu disclose all of the limitations of the parent claim. However, neither of the aforementioned references discloses the use of a second elongate member. Azegami, on the other hand, discloses the use of a second elongate member in the form of spring (35) to control the positioning of the lens. See Figure 1. The use of a second spring allows for extra control of the positioning of the lens. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a second spring in order to give more control and stability to the lens positioning apparatus.

19. As for *claim 14*, when viewed from a direction in which light travels through the lens, the first ends of the springs (35) in Azegami are disposed on opposite sides of the lens.

20. With regard to *claim 15*, when viewed from a direction in which light travels through the lens, the second ends of the springs (35) in Azegami are disposed on opposite sides of the lens.

21. **Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (U.S. Patent No. 5,400,072) in view of Ide et al. (Japanese Publ. No. 10-246848).**

22. Regarding *claim 20*, as mentioned above in the discussion of claim 1, Izumi discloses all of the limitations of the parent claim. However, Izumi fails to specifically disclose both a member and mounting structure. Ide, on the other hand teaches that it is well known in the art to mount the lens to a mounting structure which is also mounted to the movement-imparting

Art Unit: 2612

apparatus. In this case, the member is the solenoid coil (10) and the mounting structure is the lens barrel (2). The lens (4) is mounted to the lens barrel (2) which is in turn, connected to the solenoid coil (10). Therefore, the lens is connected to the member via the mounting structure. Although there is no disclosure in Ide of use in an imaging module, it obviously could be used in such a configuration. The arrangement described above is used to eliminate the motor, thereby reducing size, and to eliminate mechanical noise. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to dispose the above-mentioned structure in Izumi so that space (size) is conserved and noise is reduced.

23. Regarding *claim 21*, Izumi discloses a plurality of lenses (L1, L2, L3, and L4) mounted to the holders. The lenses are moveable together relative to the housing.

24. As for *claim 22*, if the structure of Ide were used in the module of Izumi, all of the lenses would be mounted to the mounting structure.

25. **Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (U.S. Patent No. 5,400,072) in view of Ide et al. (Japanese Publ. No. 10-246848) and further in view of Kaneda (U.S. Patent No. 5,060,001).**

26. Regarding *claim 23*, as mentioned above in the discussion of claim 21, both Izumi and Ide disclose all of the limitations of the parent claim. However, neither of the aforementioned references discloses that only some of the lenses are mounted to the mounting structure. Kaneda, on the other hand, discloses that it is well known in lens systems to implement a fixed lens group and a plurality of moving lens groups. As discussed in column 1, lines 10-28, Kaneda discloses that a fixed lens group can often be found in a group of lenses. It is well known in the art that

Art Unit: 2612

this type of arrangement allows for a varying of power of the optical system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a fixed lens group instead of moving all of the lenses so that the image module can be made to be varied in power.

27. **Claims 24-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (U.S. Patent No. 5,400,072) in view of Sekine et al. (U.S. Patent No. 5,572,372).**

28. With regard to *claim 24*, as mentioned above in the discussion of claim 1, Izumi discloses all of the limitations of the parent claim. However, Izumi fails to specifically disclose that the movement apparatus includes a first electrical coil to move the lens relative to the housing. Sekine, on the other hand, discloses that it is well known in the art to drive a lens group using an electrical coil. As shown in Figure 1, the electric coil (3) is used to move the lens rearward or forward. The use of an electric coil provides a system that conserves electric power and is capable of being disposed in a small space (col. 1, lines 46-51). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an electric coil to impart motion on a lens group so that electric power and space are conserved.

29. As for *claim 25*, Sekine discloses that the electric coil is disposed within the lens barrel (8). The lens barrel is interpreted to be the enclosure.

30. Regarding *claim 26*, Sekine disclose that the electric coil (3) is connected to the lens through the inner yoke (6) and the lens holding cylinder (2).

31. As for *claim 28*, Sekine discloses that the magnet (7) is mounted to the lens barrel (8). The lens barrel is interpreted to be the housing.

32. **Claim 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (U.S. Patent No. 5,400,072) in view of Takematsu (Japanese Publ. No. 04-223453).**

33. With regard to *claim 35*, Izumi discloses a camera subassembly that is mounted to a printed board. The subassembly includes a housing comprising shield case (200) (Figure 28A), having a first opening through which light can enter and a second opposing opening and a plurality of lenses (L1, L2, L3, and L4). As mentioned in column 19, lines 34-42, Izumi discloses that the structure is mounted to a printed board, thus enclosing the structure. The second opening is closed by the printed board upon which an image pickup device (6) is mounted. When fully assembled the package is designed to be highly airtight. This property protects against the ingress of contaminants. See column 19, lines 7-25. Additionally, as disclosed in column 24, lines 36-60, the lens holders (1 and 2) and thus the lenses, can be electrically adjusted within the housing relative to each other in order to focus the image onto the image sensor (6). An electrical signal is input to holder device to adjust the distance between the lenses (col. 24, lines 49-52). Therefore, the rejection from the previous office action will be repeated.

Izumi however fails to specifically disclose the use of flexible members that allow for forward and backward movement of the lens. Takematsu, on the other hand, discloses that it is well known in the art to use an elongate member to impart motion to a lens. Takematsu teaches the use of a spring (26) to impart motion to a lens barrel system (21). The spring is interpreted as the flexible member. As shown in Figure 1, one end is connected to the housing and the other end is indirectly coupled to the lens system (21). This structure eliminates the need for a motor,

Art Unit: 2612

thus reducing costs and battery power. Therefore, it would have been obvious to one of ordinary skill in the art to implement this system in Izumi so that battery power and space are conserved.

Allowable Subject Matter

34. **Claims 9-10, 12-13, 16-19, and 27 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding *claims 9 and 12*, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the elongate member coils around an axis through which light passes through the housing.

As for *claim 19*, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the ends first and second elongate members are spaced from each other in a direction in which the axis of revolution extends.

With regard to *claim 27*, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the first member is partially conductive and the electric coil is electrically accessed through the first member.

35. **Claims 29, 30, 32-34, and 36 are allowed.**

Regarding *claim 29*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the first elongate member has a width that is more than the thickness.

Art Unit: 2612

As for *claim 36*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the elongate member coils around an axis through which light passes through the housing.

36. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any response to this final action should be mailed to:

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-6306, (for formal communications; please mark "**EXPEDITED PROCEDURE**"; for informal or draft communications, please label "**PROPOSED**" or "**DRAFT**")

Art Unit: 2612

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday through Thursday from 7:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber, can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service desk whose telephone number is (703) 306-0377.



John M. Villecco
3/17/04



WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600